Why Quality Data is Important and Help to Improve Your Data

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Source: Center for Health Statistics, Washington State Department of Health, 8/4/2006

About The Birth Date Quality Query System

What is the BDQQ?

The BDQQ is a tool to help you improve your birth data quality. It shows you how you're doing at collecting birth certificate data. You can generate two types of profile.

#1. Compare your percent unknown for selected items to the state average for a single year.
#2. Show how your percent unknown changes over time for these items.

Note to previous profile users: The tables are like the ones you have been getting in hard copy for the past few years. This system gives you more timely profiles which you can generate at your convenience. You can also print out your profile.

How do I use the BDQQ?

You can use the BDQQ either to find out where your problems are or to look at how your data quality has changed over time. You can also get a graphical display of your data. Here's how you do it.

A. Identifying problems – use profile ('Percent Unknown Compared to the State')

Your profile has two columns of data - your percent unknown and the state percent. Compare these two columns.

If your percent unknown is **much lower than the state percent**, you're doing a better than average job of collecting the data. If most of the items on your profile are here, congratulations! You're doing a great job. If you have some hints for how to collect complete birth data, please share them using the mailbox at the end of the profile sheet.

If your percent unknown is **close to the state percent**, you have room for improvement. Click on the help screen which describes what the item is, gives hints for how to collect it, and tells why it's important. Some questions to ask might be: How do we collect this item? How can our process be improved?

If your percent unknown is **higher than the state percent**, this item definitely needs improvement. Click on the help screen which describes what the item is, gives hints for how to collect it, and tells why it's important. Some questions to ask might be: How do we collect this item? How can our process be improved? If your percent unknown is close to 100% you may not be collecting the data. Check to make sure it's included on the worksheet you use. Check to make sure the worksheet is included with the information the doctor fills out after delivery. (Hint: use a bright color so it stands out).

If you would like to have someone from the Center for Health Statistics Field staff visit you to help you find problems and discuss solutions, contact us using the mailbox at the end of the profile sheet.

Source: Center for Health Statistics, Washington State Department of Health, 8/4/2006

Caution: If you have less than 200 births in a year, your percent unknown may be high if only a few records are missing the data.

B. Looking at changes – use profile ('Percent Unknown Over Time')

Compare two or more years' data to identify any trends. Ask the following questions to help you get at the root of the problem and suggest solutions:

- Do we have this problem for all (or many) years or is it just for one year?
- If completeness has changed over time,
  - Are we getting better or getting worse?
  - What changes at the hospital might explain this trend?

If you would like to have someone from the Center for Health Statistics Field staff visit you to help you look at how your data have changed and what this might mean, contact us using the mailbox at the end of the profile sheet.

Caution: If you have less than 200 births in a year, you may see a lot of change in your percent unknown from year to year even if the number of unknowns changes only a little. Keep this in mind when looking at your trends.

C. Graphical display of your data ('Graph of Average Percent Unknown Compared to the State')

Clicking this button gives you a graph showing how your average percent unknown changes over time, compared to the state as a whole. Your average percent unknown is the average all of the percents for the 17 items on the profile. To meet national standards, our goal is to have an average percent unknown of 3.8% or less. If you hover over one of the circles on the graph, a popup window will show you the actual number.

What's so important about birth certificate data quality?

Picture a healthy baby. What a heartwarming sight!

How can we do our best to make sure all babies have a chance to be healthy? This is where birth certificate data come in. Birth certificate data are used to study why babies are born too early (premature) or have birth defects, why they get childhood cancer, and why mothers and babies die. Knowing why these things happen is the first step in preventing them. The data also help make sure that more women get prenatal care and that children get the immunizations (shots) they need.

Here's a success story. Several years ago the Medicaid program expanded their payments for prenatal care. They did this because birth data showed that low income women and their babies were not doing as well as they could be. Later, birth data showed that this program was indeed helping mothers have healthier babies, so the money was wisely spent.

Where does data quality come in? If the data have a lot of unknowns, we may not have all the information we need to find the problems.

Here's a story of failure. In one county a group of physicians wanted to establish a maternal smoking cessation program. Unfortunately more than half of the birth records for that county had unknown smoking so they couldn't tell where the problems were. The opportunity to get money to help the mothers in that county was lost because the data were incomplete.

Everyone benefits when babies are healthy. Families are happy and health care costs are lower. You are making an important contribution by helping to collect birth certificate data.

Source: Center for Health Statistics, Washington State Department of Health, 8/4/2006

The effect of unknowns on the data

Let's say someone wants to give you money to start prenatal smoking cessation classes. All you have to do is tell them how many women might need the classes so they can plan for education materials and classroom size and then they can see later on if the number of smokers goes down. So you look at your data.

Say you had 1,000 births last year and 10% of the mothers smoked. If you have good data you can tell them:

- Smoked: 100
- Didn't smoke: 900

But what if you don't have good data? If you have 20% unknown for maternal smoking, you have 200 records without data. Here's what you might see:

- Smoked: 80
- Didn't smoke: 720
- You don't know: 200

What about the 200 unknowns? How do they fit in? If none of them smoked you'd have 80 smokers, but if all of them smoked you'd have 280 smokers. So all you can say is that the number is somewhere between 80 and 280, which is going to make planning and assessment difficult.

Your uncertainty gets worse if your unknowns are higher. If you have 40% unknown your data would look something like this:

- Smoked: 60
- Didn't smoke: 540
- You don't know: 400

Then your number of smokers is somewhere between 60 and 460 so you really can't say anything about how many smokers you have. This group might instead give the money to someone who can give them a good number.

Does this sound farfetched? It actually happened.

Information on the Birth Worksheet items for the Birth Data Quality Query System

The National Center for Health Statistics (NCHS) has developed a guide to help facilities complete the birth worksheet. This guide gives details on how to collect many of the items in this profile. You may access the guide on-line at http://www.cdc.gov/nchs/data/dvs/GuidetoCompleteFacilityWks.pdf.

Mother's education

What it is: Gives the highest degree or level of schooling completed by the mother at the time of delivery.
How to collect it: Collect this item directly from the mother. **Hint :**Some facilities or providers give the mother a baby book during her prenatal care. This book describes what's on the birth certificate. The mother can fill out this part of the birth certificate before delivery and bring the book with her when she comes to deliver her baby.
Why it's important: The birth certificate does not collect data on income. Education is an important substitute measure of income and socioeconomic status (SES).The data are used to describe how education (and SES) relates to use of services, health practices, and birth outcomes and may help to provide services to those in need. Health educators also can use information on mothers' education levels to prepare appropriate and understandable materials aimed at improving mother's and baby's health.

Mother's Hispanic origin

What it is: Indicates whether or not the mother is Spanish/Hispanic/Latina and gives the country of origin for Spanish/Hispanic/Latina mothers. The mother is Spanish/Hispanic/Latina if she identifies her ancestry or origin with Mexico , Puerto Rico, Cuba, or the Spanish speaking countries of Central or South America.
How to collect it: Collect this item directly from the mother. **Hint:** Some facilities or providers give the mother a baby book during her prenatal care. This book describes what's on the birth certificate. The mother can fill out this part of the birth certificate before delivery and bring the book with her when she comes to deliver her baby.
Why it's important: People of Hispanic origin currently are the second largest group in the state. They are not a defined race group so asking separately about Hispanic origin is the only way to get complete data on the health needs of Spanish/Hispanic/Latina mothers. This information is also important for population estimates and projections.

Mother's race

What it is: Gives the race or races the mother considers herself to be.
How to collect it: Collect this item directly from the mother. **Note:** The mother should answer the race question even if she is Hispanic because Hispanic mothers may be of any race. **Hint:** Some facilities or providers give the mother a baby book during her prenatal care. This book describes what's on the birth certificate. The mother can fill out this part of the birth certificate before delivery and bring the book with her when she comes to deliver her baby.
Why it's important: This information is used to help eliminate health disparities by describing differences in access to health care, pregnancy outcomes, and childbearing patterns experienced by different race groups. It is also important for population estimates and projections.

Mother's prepregnancy weight

What it is: Gives the mother's weight immediately before she became pregnant with this child.
How to collect it: Collect this item directly from the mother. **Hint:** Some facilities or providers give the mother a baby book during her prenatal care. This book describes what's on the birth certificate. The mother can fill out this part of the birth certificate before delivery and bring the book with her when she comes to deliver her baby.

Why it's important: The mother's prepregnancy weight is combined with her height to calculate her body mass index (BMI).It is also combined with her weight at delivery to calculate how much weight she gained during pregnancy. These data are used to study how maternal BMI and maternal weight gain during pregnancy are associated with pregnancy outcome and with maternal morbidity and mortality. This information helps prenatal care providers advise their patients about healthy weights and weight gains.

Mother's weight at delivery

What it is: Gives the mother's weight at time of delivery
How to collect it: Get the data from:

1st choice: Labor and Delivery Nursing Admission Triage Form (under Physical Assessment – Weight); or

2nd choice: Admission History and Physical (H&P) (under Physical Exam – Weight).

Abbreviations to look for: Wgt – weight.

Why it's important: The mother's weight at delivery is combined with her prepregnancy weight to calculate how much weight she gained during pregnancy. These data are used to study how maternal weight gain during pregnancy are associated with pregnancy outcome and maternal morbidity and mortality. This information helps prenatal care providers advise their patients about healthy weights and weight gains.

Mother's height in feet

What it is: Gives the mother's height.
How to collect it: Collect this item directly from the mother. **Hint:** Some facilities or providers give the mother a baby book during her prenatal care. This book describes what's on the birth certificate. The mother can fill out this part of the birth certificate before delivery and bring the book with her when she comes to deliver her baby.
Why it's important: The mother's height is combined with her prepregnancy weight to calculate her body mass index (BMI).The data are used to study how maternal BMI are associated with pregnancy outcome and maternal morbidity and mortality. This information helps prenatal care providers advise their patients about healthy weights and weight gains.

Mother's cigarette smoking during pregnancy – first trimester

What it is: Gives the number of cigarettes or packs of cigarettes the mother smoked on an average day during the first three months (first trimester) of her pregnancy.
How to collect it: Collect this item directly from the mother. **Hint:** Some facilities or providers give the mother a baby book during her prenatal care. This book describes what's on the birth certificate. The mother can fill out this part of the birth certificate before delivery and bring the book with her when she comes to deliver her baby.
Why it's important: Cigarette smoking during pregnancy can affect pregnancy outcome. Mothers who smoke are more likely to have low birth weight infants and infants who die of Sudden Infant Death Syndrome (SIDS).Information on maternal smoking is used to evaluate smoking cessation programs and to determine the health impact of changes on smoking status at different points in the pregnancy.

Number of other pregnancy outcomes

What it is: Gives the total number of deliveries the mother has had where she did not have a live birth. For example, she may have had a previous fetal death or induced termination. This number includes the outcome of any pregnancy before this one. Also, if the current pregnancy involved multiple outcomes (e.g., twins etc), the number of other pregnancy outcomes includes any outcomes of this pregnancy that were not born alive, as long as they were delivered before the live birth.

How to collect it: Get the data from:

1st choice: Prenatal care record (under Gravida section 'A', PARA section 'A', pregnancy history information, previous OB history, or past pregnancy history);

2nd choice: Labor and delivery Nursing Admission Triage Form; or

3rd choice: Admission History and Physical (H&P).

Words to look for: Miscarriages, fetal demise, spontaneous or therapeutic abortion (AB), ectopic or tubal pregnancy, or fetal death in utero.

Why it's important: This information is important for studying trends in childbearing and child spacing and identifying factors which might cause a woman to lose a baby.It is also used to study health problems associated with pregnancy history, such as first pregnancies for older women.

Date of first prenatal care visit (month, day, year)

What it is: Gives the date a physician or other health care professional first examined and/or counseled the pregnant woman as part of an ongoing program of care for the pregnancy.

How to collect it: Get the data from:

1st choice: Prenatal care record (under intake information, initial physical exam, Prenatal Visits Flow Sheet, or current pregnancy); or

2nd choice: Initial physical examination.

Abbreviations to look for: PNC – prenatal care.

Why it's important: Women do better during pregnancy when they have timely prenatal care. The date of first prenatal care visit is used with the menses date to determine when during the pregnancy the woman entered prenatal care. This information measures how often women have timely care and helps in studying risks associated with late or no care and in identifying areas where prenatal care services are needed. It is also used to evaluate whether programs aimed at improving access to prenatal care are effective.

Total number of prenatal visits for this pregnancy

What it is: Gives the total number of visits recorded in the prenatal record.

How to collect it: Count only those visits listed in the most current record available. Do not estimate additional visits when the prenatal record is not current. Get the data from:

1st choice :Prenatal care record (under prenatal visits flow sheet).Count visits.

Abbreviations to look for: PNC – prenatal care.

Why it's important: Women do better during pregnancy when they have timely prenatal care is associated with improved pregnancy outcome. The number of prenatal visits measures appropriate use of prenatal care services and helps to identify areas where mothers may have problems getting prenatal visits. It is also used to evaluate whether programs aimed at improving access to prenatal care are effective.

Date last normal menses began (month, day, year)

What it is: Gives the date the mother's last normal menstrual period began.

How to collect it: Get the data from:

1st choice: Prenatal care record (under menstrual history or nursing admission triage form); or

2nd choice: Admission History and Physical (H&P) under medical history.

Abbreviations to look for: LMP – last menstrual period.

Why it's important: The menses date is used with the birth date to calculate the gestational age of the infant. Gestational age combined with birth weight determines how mature the child is at birth. The data are used to study how gestational age relates to infant morbidity and mortality and to identify which mothers are likely to have premature babies, to help prevention efforts. The menses date is also used with the date of first prenatal care visit to determine when during the pregnancy the woman entered prenatal care.

Risk factors in this pregnancy

What it is: Indicates risk factors of the mother which may cause problems during this pregnancy. The mother may have more than one risk factor.

How to collect it: This item has a series of check boxes for 8 possible risk factors (such as diabetes or hypertension), plus 'none of the above'. Check all that apply. The data for individual risk factors may be found in different parts of the medical record. For more details consult pages 7-12 of the NCHS guide (see above). Some of the sources of data are:

1st choice: Prenatal care record (under medical history, previous OB history, problem list or initial risk assessment, historical risk summary, complications of previous pregnancies, or factors this pregnancy);

2nd choice: Labor and delivery nursing admission triage form (under medical complications or comments); or

3rd choice: Admission history and physical (H&P) under current pregnancy history, medical history, previous OB history, complications previous pregnancies, or problem list/findings.

Words or abbreviations to look for: Depends on the risk factor – consult the *Guide*.

Why it's important: The risk factors included in this item are clearly defined clinically, readily collectable, important for public health and clinical research, and may affect pregnancy outcome. The data are used to estimate how many pregnant women have these risk factors and how the risk factors are associated with outcomes. This information helps in planning and evaluating services for these women.

Obstetric procedures

What it is: Indicates what medical treatment or invasive/manipulative procedures were performed during this pregnancy to treat the pregnancy or to manage labor and/or delivery. The mother may have more than one procedure.

How to collect it: This item has a series of check boxes for 3 possible obstetric procedures (such as cervical cerclage or tocolysis), plus 'none of the above'. Check all that apply. The data for individual procedures may be found in different parts of the medical record. For more details consult pages 17-19 of the NCHS guide (see above). Some of the sources of data are:

1st choice: Prenatal record (under medical history, problem list or initial risk assessment, historical risk summary, complications of this pregnancy, or factors this pregnancy);

2nd choice: Labor and delivery nursing admission triage form (under complications, medications, or comments);

3rd choice: Admission history and physical (H&P) under current pregnancy history, medical history, medications, or problem list/findings; or

4th choice: Delivery record (under maternal OB/labor summary, labor and delivery admission history, or labor summary record).

Words or abbreviations to look for: Depends on the procedure – consult the *Guide*.

Why it's important: All of the procedures included in this item are performed after 20 weeks gestation and are manipulative procedures that carry risk to the fetus or the live-born child. These data allow medical researchers to monitor the effectiveness of procedures, assess how often they are used, and see how their use relates to pregnancy outcome and to possible risks to the mother and baby.

Characteristics of labor and delivery

What it is: Gives information about the course of labor and delivery. The labor and delivery may have more than one of these characteristics.

How to collect it: This item has a series of check boxes for 9 possible characteristics (such as induction of labor or non-vertex presentation), plus 'none of the above'. Check all that apply. The data for individual characteristics may be found in different parts of the medical record. For more details consult pages 27-31 of the NCHS guide (see above). Some of the sources of data are:

Delivery record (under maternal OB/labor summary, labor and delivery admission history, labor summary record, or presentation);
Physician progress note;
Labor and delivery nursing admission triage form;
Newborn admission history and physical (H&P); or
Maternal medication record.
Words or abbreviations to look for: Depends on the characteristic – consult the *Guide*.

Why it's important: Public health recommendations provide guidelines for the use of many of the procedures included in this item. The data are used to track the implementation and outcomes of these recommendations and to evaluate the recommendations themselves. Correlation of the data with other birth data such as cesarean delivery, neonatal transfer, and NICU admission provide more complete information about the effect of labor characteristics on subsequent need for services.

Congenital anomalies of the newborn

What it is: Indicates malformations of the newborn diagnosed prenatally or after delivery. The newborn may have more than one anomaly.

How to collect it: This item has a series of check boxes for 12 possible anomalies (such as anencephaly or Down syndrome), plus 'none of the above'. Check all that apply. The data for individual anomalies may be found in different parts of the medical record. For more details consult pages 47-50 of the NCHS guide (see above). Some of the sources of data are:

Labor and delivery summary record;
Newborn admission history and physical (H&P); or
Physician progress notes; or
Infant progress notes.
Words or abbreviations to look for: Depends on the anomaly – consult the *Guide*.

Why it's important: Congenital anomalies can affect the baby's health and chances for survival. The anomalies included in this item can easily be diagnosed within the first 24 hours after delivery using widely available conventional diagnostic techniques. Data on these anomalies are used by the state's birth defects registry. The presence of an anomaly may signal the need for action, such as checking for exposure of the mother to teratogens. Geographic clusters of anomalies alert epidemiologists of the need to investigate possible common sources of teratogens, to help prevent future problems.